Joint Rapid Airfield Construction (JRAC)

2007 Demonstration Project

U.S. Army Engineer Research and Development Center

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JRAC
Joint Rapid Airfield Construction

Briefing Outline

2007 Demonstration

Regional Background – Northern Territory/Kimberly Region

Bradshaw Field Training Area (BFTA)

Recent Developments/Issues

Way Ahead

Joint Rapid Airfield Construction (JRAC)

Future Efforts: Research and Development continues through FY07

- *JRAC Design and Evaluation System for Contingency Airfields
- * Rapid stabilization for C-17
- * Rapid evaluation and repair of existing paved surfaces
- * Design JRAC deployable kits
- * Plan for JRAC '07 Demonstration at C-17 airfield

170,900-lb Payload

C-17 Aircraft 447,000-lb

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JRAC 2007 Demonstration

- Above and beyond the FY04 Demonstration
- C-17 capable airfield
- Join existing military exercise (Combined, Joint)
- Technologies tested by engineer Soldiers
- Demonstrate all applicable JRAC Technologies

New JRAC software suite
Rapid soil and site assessment kits
RAVEN
New GPS Earthmoving Control Systems

Soil Pulverizer
Quality Assurance technologies
Soil stabilizer systems
Matting system
Dust Control

What JRAC Brings to the 2007 Demo

- Planning and design capability for airfield construction / upgrade
- Training for Soldiers on all JRAC technologies
- Materials (matting systems, soil stabilization systems)
- Enhanced earthmoving systems
- Vehicles specific to JRAC construction (Raven, soil pulverizer)
- JRAC team on the ground for project support / oversight

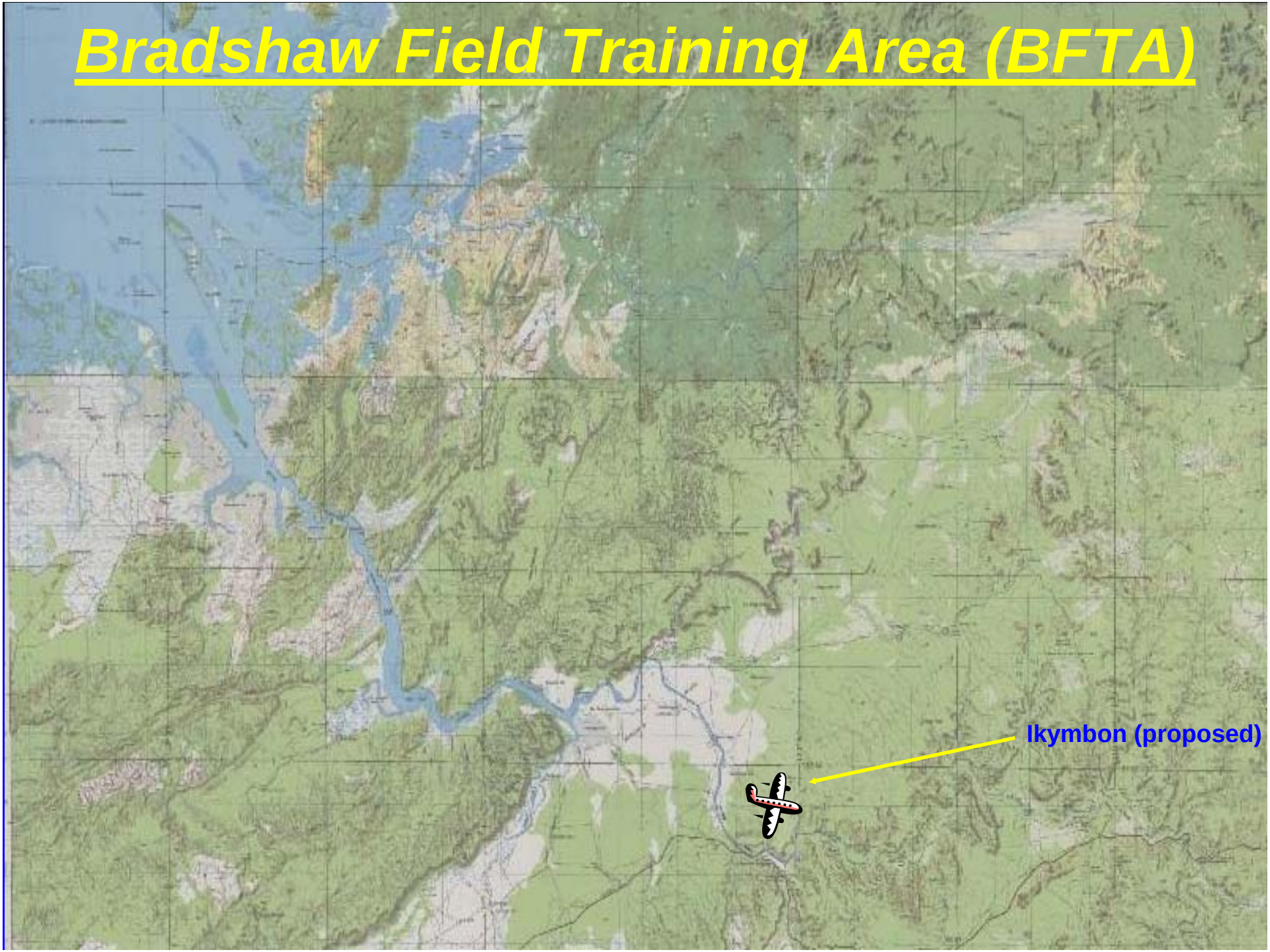
Geometric Requirements

	C-130	C-17
RUNWAY		
Length	914m (3000ft)	1067m (3500ft)
Width	18.5m (60ft)	27.5m (90ft)
Width of shoulder	3m (10ft)	
OVERRUN		
Length	91.5m (300ft)	
Width	18.5m (60ft)	27.5m (70ft)
IMAGINARY SURFACES		
Slope	35:1	20:1
Slope length	3200m (10,500ft)	

C17 operating surfaces require specific gradations – maximum particle size 10 mm (3/8 inch)

Gradations for Aggregate Surface Courses		
Sieve	Gradations	
Designation	No. 1	No. 2
1-in.	100	100
1/2-in.	--	--
3/8-in.	60-100	--
No. 4	50-85	55-100
No. 10	40-70	40-100
No. 40	24-45	20-50
No. 200	8-15	8-15

Bradshaw Field Training Area (BFTA)



Bradshaw – Proposed Airfield Site

- Geometry – Clearing would be required but no real restrictions
- Close proximity to Range Control and other facilities (power and water)
- Some clearances already obtained

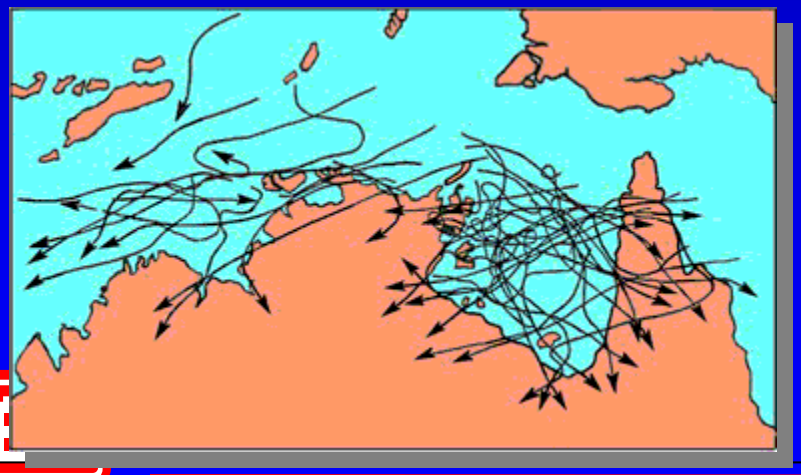
Scope

- **Course of Action 1 – MOG 1 constructed by AS and US then JRAC demo constructs stabilized turnarounds.**
- **Course of Action 2 – MOG 1 constructed by AS and US then JRAC demo constructs MOG 1 apron.**
- **Course of Action 3 – MOG 1 constructed by AS and US then JRAC constructs a MOG 2 apron.**

Regional Characteristics

Tropical climate

- **Cyclones may occur from December to April**



Tropical Climate

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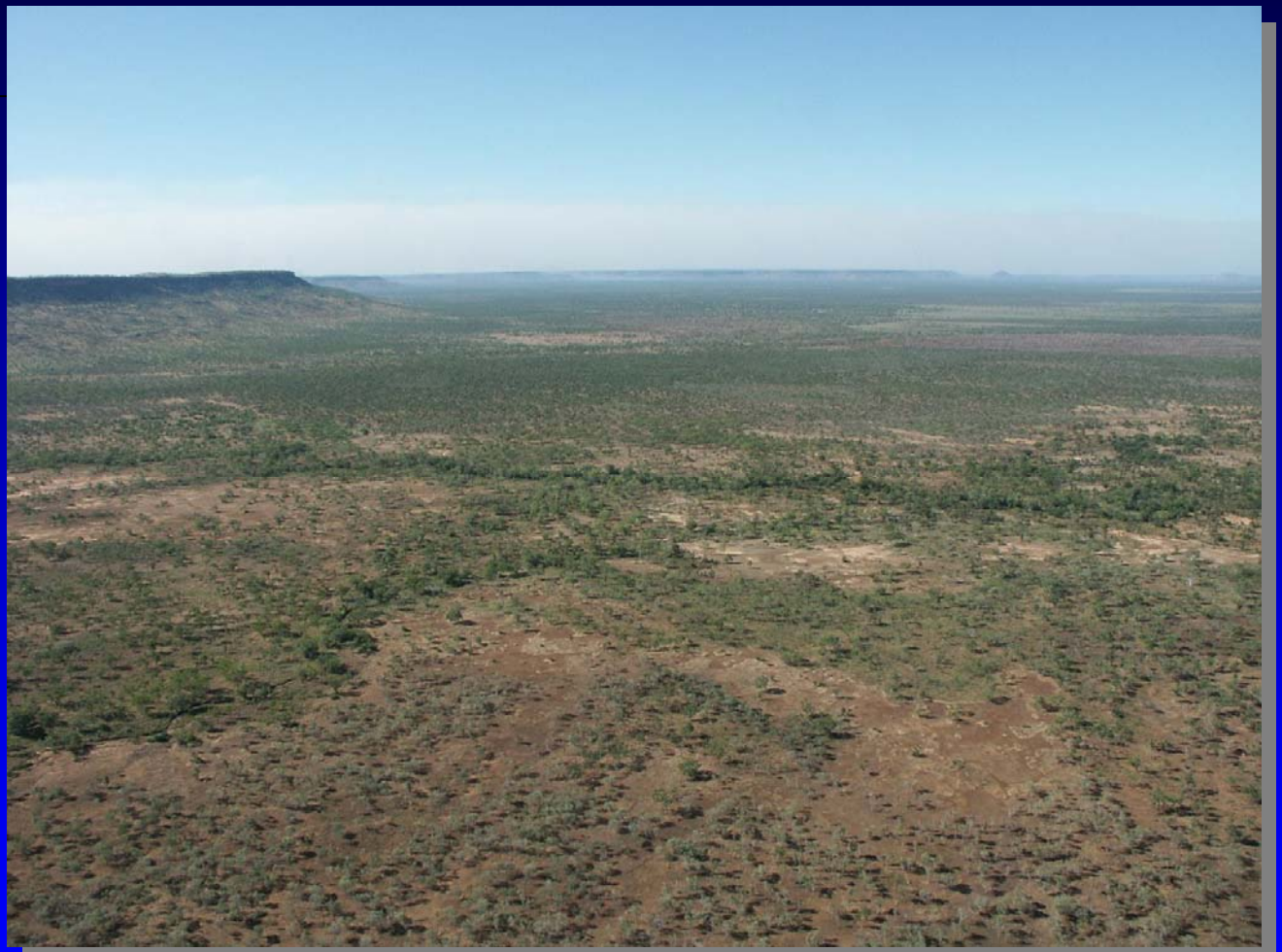

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Tropical Climate

November to March -‘The Wet’

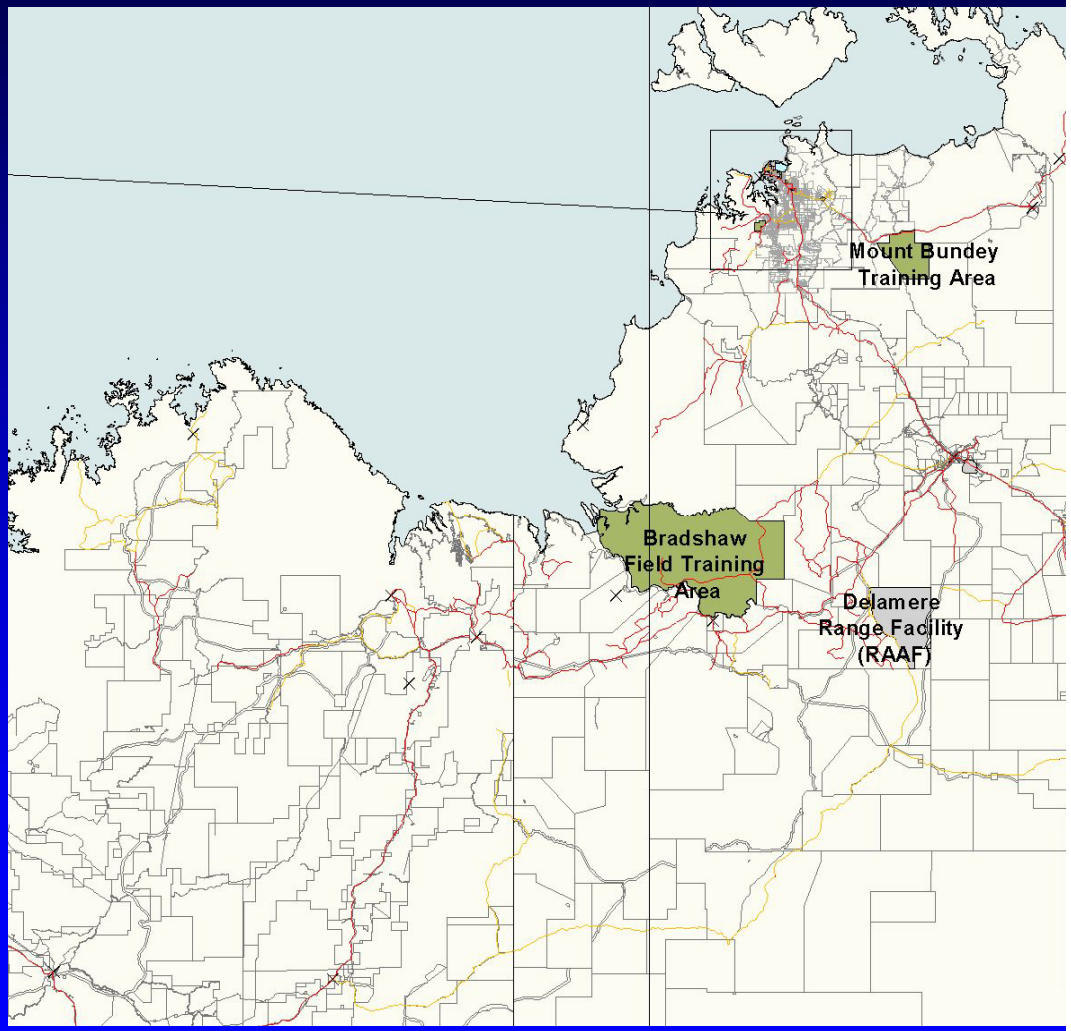
BFTA “Station” Homestead

BFTA - Location

8,710 sq km (3362.95 sq miles) (2.15 million acres)

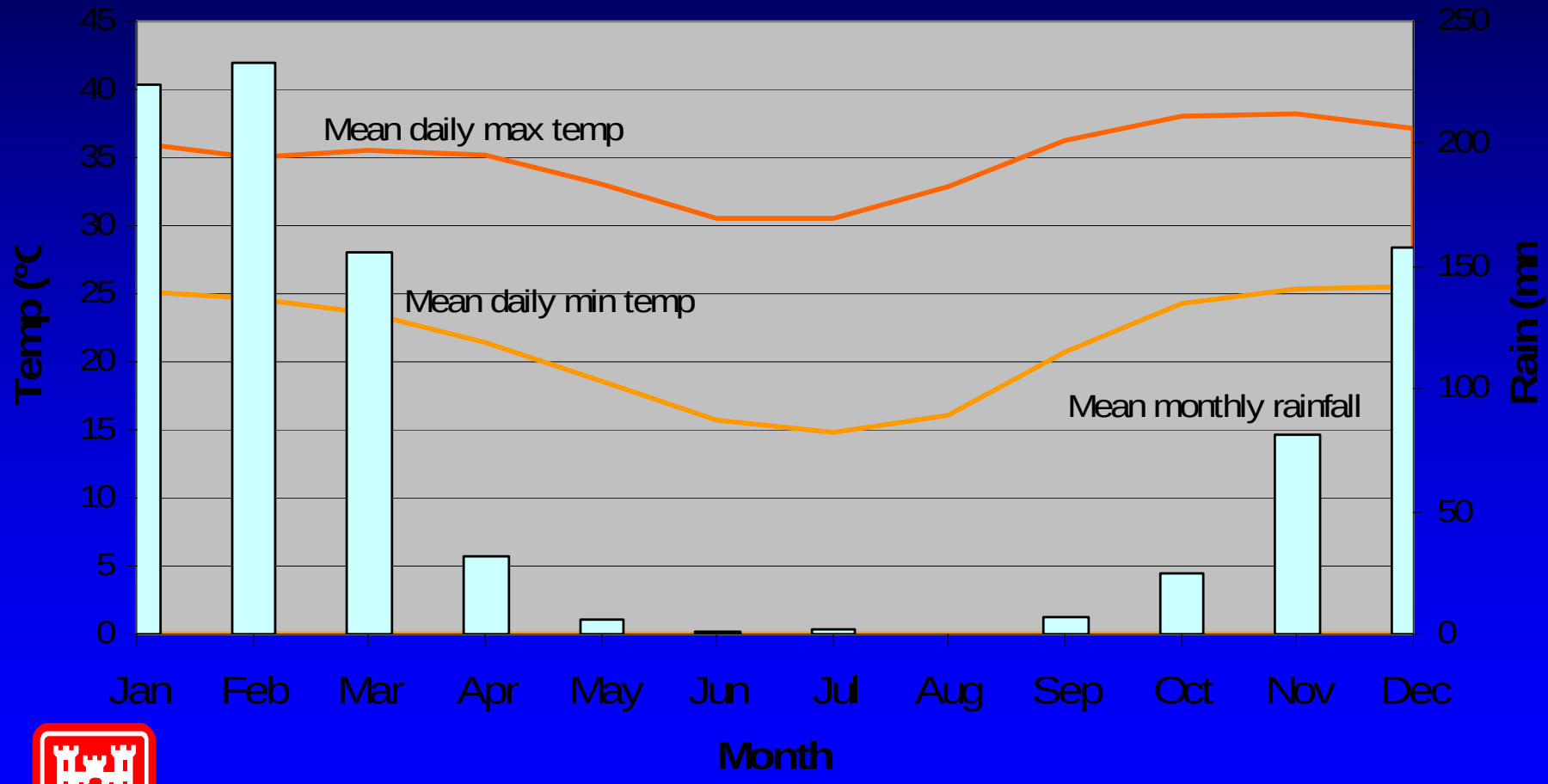
Seven to nine hours drive south west of Darwin - between Katherine and Kununurra

North of Timber Creek across Victoria River



Bradshaw Field Training Area

BFTA TEMP AND RAINFALL



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BFTA - Future Development

Will be the major training area in Northern Australia comprising

Training Force Maintenance Area

- **2 x 250 pers Scale A camp**
- **2 x 250 pers satellite camps**

Range control complex

Caretakers residence

110 km road network

All weather bridge access

Recent Developments / Issues

- Verbal commitment from AS Army to participate in JRAC demo
- USARPAC actively working to identify US Army unit to participate in anticipation of JRAC Demo at TS07
- USARPAC pursuing additional funding via Exercise Related Construction (ERC) to assist the participating Army unit
- Still need to verify/locate a reasonable source of aggregate and water for construction of the airfield

Way Ahead

- JRAC team completes site surveys and provides feedback (June 2005)
- Participation in the August OWG meeting in Darwin
- Develop Project Management Plan (PMP) for Bradshaw Airfield construction (Aug 05 to Nov 05)
- Presentation of plan and "issues" at Concept Development Conference (CDC) in Hawaii (Jan 06)
- Begin planning and design process (Feb 06)
- Site Survey at Bradshaw (May-Jun 06)
- JRAC Demo (May-Jun 07)